

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

Claim 1 (currently amended) A method for forming an electric circuit on a construction member of a machine based on a set of three-dimensional data, the data used to determine a position and a profile of the construction member, a position of the electric circuit, and a shape of the electric circuit, the electric circuit used for electrical connection between electric instruments mounted on the construction member,

wherein the data is associated with a reference coordinate system provided in the machine, and the data includes coordinates of points for determining arrangement of the electric circuit, a distance between any two of the points adjacent to each other, and a cross-sectional area of the electric circuit extended between the two points,

the method comprising the step of converting the data to a second set of data associated with a reference coordinate system provided in the construction member, the method further comprising the step of intermittently jetting a first molten metal against the construction member to define rows of metal grains so as to deposit the first molten metal on a surface of the construction member to form the electric circuit on the construction member based on the second set of data,

wherein the deposited metal grains overlap one another such that the electric circuit has the cross-sectional area stored in the second set of data between the two points, and

wherein the molten metal is jetted from a nozzle and the nozzle has X, Y, Z axes perpendicular to each other, the nozzle moving along each of the X, Y, Z axes, the nozzle moving in a circumferential direction around each of the X axis and the Y axis.

Claims 2-6 (canceled).

Claim 7 (original) The method as described in claim 1 wherein an insulator is layered on the electric circuit.

Claim 8 (previously presented) The method as described in claim 7 wherein the method comprises the step of jetting a second molten metal against the insulator to deposit the second molten metal on the insulator.

Claims 9-10 (canceled).

Claim 11 (currently amended) A method for forming an electric circuit on an insulating intermediate member laid on a construction member of a machine based on a set of three-dimensional data, the data used to determine a position and a profile of the construction member,

a position of the electric circuit, and a shape of the electric circuit, the electric circuit used for electrical connection between electric instruments mounted on the construction member,

wherein the data is associated with a reference coordinate system provided in the machine, and the data includes coordinates of points for determining arrangement of the electric circuit, a distance between any two of the points adjacent to each other, and a cross-sectional area of the electric circuit extended between the two points,

the method comprising the step of converting the data to a second set of data associated with a reference coordinate system provided in the construction member or on the intermediate member,

the method comprising the step of intermittently jetting a first molten metal against the construction member to define rows of metal grains so as to deposit the first molten metal on a surface of the intermediate member to form the electric circuit on the surface of the intermediate member based on the second set of data,

wherein the deposited metal grains overlap one another such that the electric circuit has the cross-sectional area stored in the second set of data between the two points, and

wherein the molten metal is jetted from a nozzle and the nozzle has X, Y, Z axes perpendicular to each other, the nozzle moving along each of the X, Y, Z axes, the nozzle moving in a circumferential direction around each of the X axis and the Y axis.

Claims 12-16 (canceled).

Claim 17 (original) The method as described in claim 11 wherein an insulator is layered on the electric circuit defined on the insulating intermediate member.

Claim 18 (previously presented) The method as described in claim 17 wherein the method comprises the step of jetting a second molten metal against the insulator to deposit the second molten metal on the insulator.

Claims 19-50 (canceled).

Claim 51 (previously presented) The method as described in claim 1, wherein, in the step of intermittently jetting the first molten metal against the construction member, an aerosol of the molten metal is jetted with compressed air against the construction member to define the electric circuit.

Claim 52 (previously presented) The method as described in claim 51, wherein, in the step of intermittently jetting the first molten metal against the construction member, a mask is provided for the construction member to prevent scattering of the molten metal, the mask having a through hole which passes the molten metal to deposit it on the construction member.

Claim 53 (previously presented) The method as described in claim 1, wherein, in the step of intermittently jetting the first molten metal against the construction member, a compressed gas having a temperature lower than a melting or softening temperature of the metal is jetted from a nozzle with an ultrasonic speed such that the grains of the metal are entrained in the ultrasonic speed flow of the gas in the nozzle.

Claim 54 (previously presented) The method as described in claim 11, wherein, in the step of intermittently jetting the first molten metal against the construction member, an aerosol of the molten metal is jetted with compressed air against the construction member to define the electric circuit.

Claim 55 (previously presented) The method as described in claim 54, wherein, in the step of intermittently jetting the first molten metal against the construction member, a mask is provided for the construction member to prevent scattering of the molten metal, the mask having a through hole which passes the molten metal to deposit it on the construction member.

Claim 56 (previously presented) The method as described in claim 11, wherein, in the step of intermittently jetting the first molten metal against the construction member, a compressed gas having a temperature lower than a melting or softening temperature of the metal is jetted from a nozzle with an ultrasonic speed such that the grains of the metal are entrained in the ultrasonic speed flow of the gas in the nozzle.